THE

AGRICULTURAL MAGAZINE.

CAMDEN, NEW JERSEY, FEBRUARY, 1826.

PRICE OF DOMESTIC ARTICLES.

In Philadelphia, superfine wheat flour is quoted at from $4 62½ to $5 per barrel—wheat from 80 to 88 cents per bushel; rye from 60 to 65; corn from 66 to 75; oats from 34 to 38, and potatoes at 87½ cts. Cheese sells from 6 to 9 cts. per pound; lard from 6 to 8 cents; butter from 15 to 20 cents, and hams from 8 to 12 cents. Feathers bring from 32 to 36 cents per pound. Merino wool from 45 to 60 cts. do. 7-8 from 44 to 45, do. common 30 to 32 cents.

At Pittsburgh, (Penn.) wheat brings from 35 to 40 cents per bushel; rye 20 cents; corn 25 cents, and potatoes 40 cents. Pork from 2½ to 3 cents per pound; hams 6 cents; butter in kegs from 7 to 8 cents, and lard 6 cents.

The following is the weight of a pen of 8 hogs ten months old, from Mr. Johnson's imported breed, killed the last season by Mr. Samuel Mulford, of Salem County, New Jersey:

1st	320	5th	328
	296		372
	300		314
	342		338
Total			2,610

A stalk of rye is said to have been taken the past summer, from a field of Mr. Jacob Urler, of Bucks county, (Penn.) which had 12 ears.

MAMOTH COW.

On the 16th of January, 1826, Elisha Hanson, Esquire, of Sandwich, N. H. slaughtered a cow of the improved Sandwich breed; whose weight was as follows:—Quarters 948 lbs.; hide 90: rough tallow 114—total 1152.—The same gentleman last year slaughtered a cow of the same breed, whose weight was about 900 pounds.

PENNSYLVANIA AGRICULTURAL SOCIETY.

The Society met on Saturday, January 14th, 1826, at their hall, the following members being present: Manuel Eyre, George Blight, Loyd Jones, Thomas Smith, of Delaware, Samuel Davis, James Worth, Dr Hare, William H. Keating, Aaron Clement, Jonathan Thomas, Caleb Churchman, Peter Graham, Thomas Mitchell, Thomas Landreth, George Washington Sargeant, John Hare Powel, Reuben Haines and John P. Milnor.

The following members were unanimously elected officers for the present year :—

President.—Jonathan Roberts.

Vice Presidents.—William Harris, John Worth, Stephen Duncan, Thomas Serrill, George Sheaff.

Corresponding Secretary.—John Hare Powel.

Treasurer.—George Blight.

Directors.—Manuel Eyre, Jonathan Thomas, Reuben Haines, Caleb Churchman, William J. Miller, William Phillips, Thomas Smith, Samuel West, John Willcox, Samuel Davis, Henry L. Waddell, Anthony Taylor, James Cox, Matthew Roberts, Richard B. Jones, G. W. Holstein, John G. Watmouth, William Darlington, Charles Miner, William Evans.

Recording Secretary.—John P. Milnor.

Assistant Recording Secretaries.—Charles J. Davis and Adam Siter.

The following gentlemen were unanimously elected members of the Society: Isaac W. Roberts, Paul Jones, John Roberts, George W. Roberts, John Moss, Charles Kuhn, William Cook.

It having been stated that certain speculative writers had condemned the introduction of British sheep, and improved races of cattle, the following papers were offered, opposing facts to ingenious disquisition.

A note from one of the Vice Presidents, an extensive grazier of Delaware county, on Merino and Southdown sheep, conveying his opinions upon the improvement of Merino sheep, for the purposes of the grazier as well as the manufacturer ; and observing that he had selected a Merino ram, with reference to his form as well as his fleece ; had made crosses with a breed of Southdowns, had obtained, in consequence, *larger and better* carcasses; wool which sold at the price of Merino ; animals which at two exhibitions, received the premium for *Merino sheep*, one of them, a ram, having in successive years afforded *fifteen pounds of wool in the yolk*, another, an ewe, nine pounds in the same state, although the wool was unusually free from extraneous matter, excepting the *abundant supply of yolk* ; and in confirmation of the opinion upon the advantages of the *cross*, stating, " three two years old grass fed wethers, to the best of my belief yielded 67½ pounds of rough or gut fat ;" and further, " I have examined the Southdown sheep at Powelton. I think them extraordinary animals, having good forms with the appearance of being thrifty. The fleeces are compact, resembling Merino. I do not recollect to have seen such sheep in this or any

other part of the country, taking into consideration their fleece and form."

A letter from the corresponding secretary to Mr. Clement, asking his opinion as a successful breeder of sheep, upon the forms, points, fleeces, general appearance, and fitness for grazing purposes, of some Southdown sheep imported by Mr. Powel *since the last exhibition;* to which Mr. Clement replied—

"Your Southdowns are clothed with wool of fine quality and close staple, their bellies well covered, and they appear to be vigorous and hardy." To the question "have they wide chests, wide loins, heavy hind quarters, long frames, exhibiting a good carcass for a grazier?" Mr. Clement replied: "They possess the above named points, in a very eminent degree."

A letter from an extensive and experienced farmer from Delaware county, in reply to the corresponding secretary's inquires, in regard to sheep; declaring that he had always found the *most* yolk *in the best and finest Merino fleeces;* that he had examined the recently imported Southdowns, that he had never seen such sheep, and that they appeared to be better adapted to the purposes of this country than any with which he had been acquainted.

In confirmation of the foregoing opinions upon Southdown sheep, a certificate was produced from eight gentlemen of an adjoining county, farmers by vocation, who, as members of a neighbouring agricultural society, had visited Powelton, at their own suggestion, saying—"We have examined the Southdown sheep; they are accurately formed, they have close fleeces, the wool equal to 7-8ths Merino."

Also a certificate from two of the most respectable and intelligent wool staplers of this state, declaring that the samples of wool shown by the recording secretary, taken from a Southdown ram imported by Mr. Powel in November last, were equal to 7-8ths blooded Merino.

A note from Mr. Bullock, who had been "for a number of years a wool stapler in England," and who has been for some years extensively engaged in the purchase and sale of wool in this country, saying: "I have sold Southdown wool in England, and I do prefer the picked lock Southdown wool, to the picked lock of full blooded Merino of this country. The finest fleeces of Merino have always the most yolk."

Mr. Anthony Davis who had been a grazier in England, and is now Mr. Bullock's partner, confirmed Mr. Bullock's opinion.

From Alexander Reed, Esq. an extensive and practical farmer of Washington county, Pennsylvania, conveying his opinion on certain "*improved*," neat cattle, and giving facts in proof of their superiority, over the best "*native*" breeds.

JOHN P. MILNOR, Recording Secretary.

The Philadelphia Society for Promoting Agriculture, held its annual meeting January 17, 1826. A correspondent has favoured us with the following list of officers for the present year, and a

correct account of the proceedings of the Society. Our readers will find several very interesting subjects referred to.

The President, Richard Peters, in the Chair.

The election of the officers of the Society took place as follows:—

President.—Richard Peters.

Vice Presidents.—William Tilghman, James Mease, Nicholas Biddle, Isaac C. Jones.

Treasurer.—William M. Walmsley.

Secretary.—W. S. Warder.

Curators.—Reuben Haines, Roberts Vaux, Stephen Duncan, Jere. Warder, John Hare Powel.

Librarian.—William S. Warder.

Corresponding Committee.—Richard Peters, William Tilghman, Zaccheus Collins, James Mease, James Vaughan.

The following communications were read—

1. By a Member—Observations on the importance of yolk for the nourishment of wool; on the advantages of attending to the form of merino sheep, and on the success of British farmers in obtaining a race fitted to supply fine wool, and fine mutton.

2. Mr. Philips gave an account of the successful experiment of a gentleman in Philadelphia county, in sowing rape-seed. The crop was great, and afforded very nourishing food for sheep, for which animals, the plant is regularly sown in Europe. The roots survive the winter, and vegetating in the following spring furnish seed or excellent pasture. Some of the oil was expressed from the seeds, at a flaxseed mill, and gave at the rate of one gallon to the bushel. It was shown to a regular English Wool-stapler settled in Philadelphia, who offered to contract for several thousand gallons annually at one dollar per gallon, for the purpose of oiling wool prepared for making cloth. He remarked that one cause of the inferiority of American cloth, was the want of rape oil to grease the wool. It is preferred to olive oil. Mr. John Perkin, of Newport, Delaware, cultivates rape, and an account of the mode to be pursued, with respect to it, is given by Mr. William Parkin in the American Farmer, vol. 2. p. 395.—Rape offers a new object of profitable attention to the American farmer—furnishing superior pasture for cattle and sheep even in the winter;—useful and abundant oil from the seeds:—rich food for cattle in the cake after the expressing of the oil, and being an excellent preparative crop for wheat. The powdered cake is extensively used in England as a manure for drilled turnips, and the sum stated by Mr. Bloomfield of Norfolk, when on a visit to the United States a few years since, to be annually laid out by him for that object, would, if mentioned, excite wonder in some, and disbelief in others who "pride themselves on never having been out of their native state," and who, probably, despising all knowledge of agriculture contained in books, cannot have an idea of the extent of a British farm, the capital invested in it, or of its garden-like culture.—From the rape-seed oil, too, potash, and the *Savon Verd* or green soap is made, which for scouring wool, is preferred in manufactories of France to all other soap.

3. Dr. Mease gave an account of a new and extensive source of

consumption of merino wool, in its use for the bodies of hats, the manufacture of which is extensively carried on at Hamilton Village, on the west side of the Schuylkill, by machinery moved by a steam engine of five horse power. The inventor is Mr. Isaac Sandford. The wool employed is of its natural length, and the hats, when plated with fine fur, are as light and neat, but more durable than roram. —The prices also, of the bodies, and of the hats when finished, are much reduced.—A quality of wool is stated by Mr. Sandford to be much wanted for hats, viz: that of lambs shorn about the end of August.—This practice is partially followed in the United States, and two of the few practical farmers who favour the public with the result of their experience, have spoken decisively in favour of the practice, as regards the thickening of the succeeding fleece, in preventing the loss of wool in the following year and in promoting the growth of the animal. One of these farmers writes after 17 years experience. Both refer to the common sheep of the country; with respect to merinos, it is known that the fleeces of the lambs of one of the breeds abound with hair, which unfit them for making cloth, but does not prevent their use in forming the bodies of hats. The second fleeces from lambs, which had been shorn in August of their first year will be free from hair, and sell for more than if the first fleece had been permitted to grow. The wool of the first shearing will consequently be a clear gain, and at the same time the manufacturer would be supplied with the article in an improved state.

The following premiums were proposed:

1. Fifty dollars, or a gold medal of equal value, for the greatest quantity of sewing silk made from coccoons of silkworms which have been bred in Pennsylvania, and fed on the white or Italian mulberry tree.

2. Twenty five dollars for the best treatise on the culture of the Italian mulberry tree, and on the breeding and management of silkworms, the result of practice in the United States.

3. A silver cup, value *fifty dollars*, for the best specimen of wool adapted to the manufacture of superfine broad cloth, reference being had to the form, properties and characteristics of the sheep, fitting it for the production of high flavoured mutton, with light offal.

4. A silver cup, value *fifty dollars*, for the best specimen of long or combing wool, reference being had to the form, properties and characteristics of the animal, affording most flesh and tallow with least offal.

A silver cup, value *twenty-five dollars*, for the best potatoes produced from the seeds of the apples, reference to be had to the product and quality of the root.

The publishing committtee reported that the fifth volume of the Society's Memoirs would probably be presented at the next meeting.

EXTRACT OF AN ORATION.

Upon the dignity and utility of the art and science of Agriculture, delivered before the Dorchester Agricultural Society and a numerous audience, at their first Exhibition and Fair, held in Cam-

bridge, November 10, 1825, by *Joseph E. Muse*, President of the Society.

This day, gentlemen, will constitute a *glorious epoch* in the *annals* of Dorchester county; *this day* the *first*, on which the cultivators of our soil have convened, to receive the honourable badges of successful emulation; and to deliberate on and systematize schemes of agricultural improvement, will establish an *anniversary*, which will command the respect and admiration of our children; because, it will promote their wealth and happiness; and perpetuate their fathers' monument of independence to ages unknown; for agriculture is the base of national wealth; and national wealth of human liberty; as the arms of our beloved country, united in architectural strength and beauty, they constitute one collossal column, "*unum e pluribus*," the base of agriculture, the shaft of wealth, and the capital of human liberty.

To trace minutely, the history of agriculture, would be a useless occupation of time; a mere sketch of the veneration in which it has been held, from the earliest ages, through the labyrinth of antiquity, would be a tedious and unavailing labour; it is sufficient to know that at all times, and by all nations, the art of agriculture has been admired as the first and best occupation of man. The earliest history of the eastern nations establishes their knowledge of and respects for this noble art; by which they supplied themselves with the necessaries and luxuries of life.

The Chaldeans who inhabited the native country of agriculture, had by assiduity, attained to considerable perfection in this valuable art. The Egyptians regarded it as a divine blessing, immediately conferred upon them, by their god Osiris, and worshipped in superstitious gratitude their beasts of the plough; and the Persians embraced it among the precepts of their religion; striking instances of its ancient and exalted dignity.

In the darker ages, which obscured and depressed the human mind, agriculture languished with the other arts; as soon as the faculty of reason began to dawn, and by its overpowering rays to dispel the rude the barbarous cloud, the benign genius of agriculture is again conspicuous, exerting her salutary and beneficent energies, for human comfort and happiness; she has flourished in all ages, *pari passu*, with the civilization of man; she has sunk into obscurity with the debased and barbarous mind; with the revival of letters, and the improvement of the human understanding, the tutelar genius of agriculture has again been adored, next only to the great God of nature, who conceded her to fallen man as a pledge of his divine benevolence.

Does it excite astonishment then, that, with this established character of agriculture, the present age, with its mighty and successful efforts to ameliorate the condition of man; with all its rapid strides to perfection in the various departments of art and science, have not neglected this great boon of Providence; but have, by unanimous consent, placed it in the first order of human employment in reference to the beauty and extent of the science, and the benefits to mankind, resulting from the practice.

While agriculture was consigned to the charge of sloth and ignorance; while the only principle of action was the custom of forefathers, without adverting to the physical and moral necessity of improvement, or the peculiar circumstances under which these customs were adopted, agriculture, reproach, and ignominy, were synonymous epithets; the farmer was despised as a plodding fool, a fit companion only for the beast, which dragged his reluctant plough: but now, that the human mind has expanded above those grovelling notions; when reason is connected with actions; when the art is becoming founded in science; and elementary principles becoming developed by observation and experience to guide and instruct the farmer, to render intelligible what he may discern in the sphere of his profession, and conduct him to rational inferences; now, since this happy revolution; since the faculty of reason has acquired the supremacy in this great department of human affairs, the farmer deservedly ranks as a gentleman of the first order in society; his profession is honourable, learned, and useful; it peculiarly conducts him, in his studies and reflections to the great and wonderful operations of nature; it inclines him to investigate their causes, and affords him a delight, of which none others can so largely anticipate.

The theory of agriculture cannot yet be said to be fully established: hence various and opposite theses of vital interest; we must not, therefore, hesitate to examine new doctrines, to detect errors, or suggest what we consider truths, because of the fallibility of human reason; we should not encourage distaste for theoretic inquiry, because the human mind has been led into error; by those very errors and their consequent detection; by new facts and new theories we arrive at our final purpose, the truth which we have desired.

To attempt the delineation of a system of agriculture preferable to any other, when I am addressing an audience of much eminence and experience, would be presumptuous; yet I shall take the liberty conferred by the office, with which you have been so kind as to honour me, to offer a few concise suggestions on some of the most generally interesting topics in relation to agricultural improvement.

I am aware, gentlemen, of the prejudices existing in the minds of many against theory in agriculture; delude not yourselves with this too popular sentiment; without theory, the life of science, no art can attain to perfection enomalous indeed would be the case, were agriculture to grow and flourish in ignorance without the aid of science, without system, without a knowledge of elementary principles; these enable us to shun the quicksands of error, and lead us through experience to truth; as lighted beacons to the benighted navigator, which preserve him from rocks and shoals, and conduct him in the channel of safety to his destined haven.

I do not contend that every farmer must be a theorist, or every theorist a farmer; but that by the influence of science all arts and professions have flourished; and without it they have languished; they are different departments of the same institution; co-equal and co-essential; as the muscle and the nerve in the human economy, the one directs, the other performs; the one exerts a moral, the other a physical influence.

By means of agricultural science, we understand the constitution of soils, and their various defects; the nature of manures, and the mode of their operation; and necessarily, their peculiar adaptation to supply the defect of an absent substance, or to neutralize, nullify, or perhaps render wholesome and useful to vegetation present substances of the most pernicious qualities; has your soil acid? destroy the poison by alkaline matters. Is the acid sulphuric? by lime you convert it into plaister of Paris. Has it a metalic salt, a vegetable poison? by time you discompose it, and render innocuous. Has it a cohesive clay? by burning you render it friable and pervious to the extension of the tender radicle; you produce a substance which I denominated the "*deutoxide* of *aluminum*," with new chemical properties, which I have explained on another occasion, highly conducive to vegetable life and growth; one whose universality and excellence will be recognised at a future day, by the farmer of energy and enterprise, among the greatest favours of God to man.

This subject in general, of the science of agriculture, is one of infinite beauty and interest, but too attractive, and too diffuse, for the bounds of a limited address, and I shall confine my remarks to as few topics, and within as small a compass as the nature of the subjects will admit of.

Next in succession to a view of its dignity, beauty and utility, is naturally associated the correlative idea of the means best adapted to the promotion and perfection of the art and science of agriculture; and upon this subject, though copious, I will venture to ask your patience, but for a few moments.

It is obvious that information is the first pillar of this magnificent edifice, and equally so that it must be derived from the accumulative resources of the many; did this proposition require support, it would be found in the rapid growth of the arts and sciences from the invention of Printing; the facilities which this noble art has afforded to mankind for the acquirement of knowledge, it would be idle to dwell upon, and that it has contributed to the knowledge of agriculture, as well as other objects of human attention, history affords us ample testimonies; and that books on agricultural subjects, are a fruitful source of this knowledge, seems undeniable.—Periodical publications, devoted to agricultural subjects conducted with talent, and of widely extended circulation, afford boundless means of popular instruction—of this source of knowledge and information, the American Farmer, published in Baltimore by Mr. Skinner, is an instance, which reflects honour on the state; by this medium, for the small price of five dollars per year, the aggregate knowledge, observation and experience of millions are faithfully conveyed every week in the year, to the subscriber's door.

Agricultural associations, such as we have now instituted, affording frequent opportunities of a familiar interchange of hypothetic sentiments, as well as of practical results, and exciting by proffered badges of victory, a meritorious emulation to excel in points of the highest local interest; must of necessity operate, as a mean of improvement, as a bond of social harmony, as a fountain of know-

ledge and information, whose wholesome, ethereal waters will refresh and invigorate the body and mind of the thirsting farmer, who may indulge in the luxurious potation.

In regard to particular objects I shall perform my duty by noticing chiefly, such as peculiarly concern our local interests; the improvement of our soil—manures, and their application, are topics so trite that to name them is almost plagiarism. Yet I will take the occasion to state a fact within the sphere of my own private observation, viz.—That upon the careful analysis of several fields of my own, of different characters, with argil and silex in various proportions, some possessing lime, and others not a particle of it, I have found, that, *cæteria pluribus*, those containing lime, though in minute quantities, are most disproportionately productive; yet, one containing an excessive portion of it, was obviously impaired by it; and did not discover the effect of usual manuring, so glaringly as the rest. And though this result is in contradiction of the sentiments of an English farmer of much celebrity, (Mr. Anderson) who has used from seven hundred to a thousand bushels to the acre; and pronounces its effect, in promoting the fertility of a soil, to be almost infinitely *pro rata*, with the quantity employed; yet the results of my experiments leave no doubt on my mind, that the use of lime in unlimited indefinite quantities, will be highly injurious.

In regard to the application of farm-yard manures; whether in a recent or rotted state, I presume that, in due decorum and respect for the worthy advocates of the latter doctrines, it must still be classed among the moot points of agriculture; yet in a country like ours, where the fallow crop possesses sturdy powers of digestion, with a capacity to assimilate the coarser food for its nutriment, and to leave the finely elaborated and more delicate articles for the repast of a more tender and more luxurious family, I do not hesitate to adopt the doctrine and practice of *recent* manures, whereby the medium and process of preparation becomes an object of profit; the work is as well done, the ultimate and timely preparation of the manure, for wheat, or other small grain, is as well accomplished and you receive for your trouble an immediate and valuable compensation, which is otherwise totally lost. In support of this doctrine, which I have long espoused, chimistry offers her strong and helping hand; but I will not upon this subject at present, trespass longer on your patience.

Auxiliary to those of a calcarious nature, and the large class of decomposing animal and vegetable matters, are many others, which the enterprising farmer may discover perhaps in the *vicinity* of his fields,. The rich black loam of swamps, marshes and bottoms, abounding in carbonaceous matter, whose strong affinity for the oxigen of the atmosphere, results in a solution, (carbonic acid,) the most powerful agent of vegetation; the heads of coves. and the mud bottoms of ponds, which have served as receptacles of the richest principles of the neighbouring lands for ages past, are invaluable sources of manure; (et from experiment I can assure you, that these are frequently vitiated by the presence of sulphuric acid.

which must be neutralized, in compost, with the saline offal of the farm yard; or, by lime, or other salifiable bases, blended with the heaps, which latter method will be found equally effectual, and more convenient.

The muriate of soda (common salt) has had its encomiasts; with what propriety, my experience has not instructed me, or rather contradicts it; from four to eight bushels per acre is said to have produced fine effects, and particularly on grasses; it is highly septic, in small quantities, and may operate, by converting coarse vegetable matter into digestible food; so small are the mouths of the absorbent vessels of plants, that they can imbibe no neutriment, except it be in a state of solution; the *particles* of *impalpable* powder are too large to be admitted by them; salt in many instances promotes this solution; salt is also, deliquescent; it attracts the moisture of the atmosphere, which property may be easily conceived as contributive to the growth of vegetables; to this substance (salt) may perhaps, chiefly, be referred the benefits derived by some from sea-weed, which by the experiment of Mr. Davy, give about four-fifths of its weight of water, and should therefore be spread and ploughed in, in a recent state.

Vegetable substances of a ligneous nature applied to the purposes of manure, require before use a partial decomposition, which may be produced speedily by quick lime, or, more slowly, but equally well, in compost; but animal substances are converted by lime, into an insoluble mass, therefore lime will prove pernicious to a compost containing much animal matter.

Next in order, as a feeble disciple of the Mantuan farmer, who is worthy of our studies and imitation, and an accomplished prototype, the planting of fruit trees should occupy a share of our attention; our orchards are neglected; the fruit propagated in the country, is generally so infamous, as to demand extermination, and the substitution of new trees of choice sorts, or, the *budding* and *engrafting* of the best fruits of our climate, upon the *old* stalks of worthless kinds; in three years the transformation may be effected, by the latter method.—In place of the present growth of the sickly, insipid fruits of our country, we may, with little exertion, find ourselves, *as if magically*, possessed of delicious fruits, a source of health, luxury and profit.

In regard to the condition of our flocks, I am conscious I shall receive the undivided assent of my audience; our local necessities most imperiously demand relief in this important and neglected article. We should procure new breeds and improve their progeny by careful and generous treatment; fallacious and narrow is the judgment which would exclude from premium a high blooded animal of fine points and valuable character, because it has been imported; because it has been obtained for the benefit of the country at great cost and trouble.—The end in view is not individual gratification, but the public good; and this end is better attained by the importation of superior (*if* RESIDENT) than by our own inferior breeds; and therefore it should be encouraged by the utmost abilities of the Society.

While on this subject, I must advert to a seemingly interesting question, agitated for some years, and still unsettled, viz. the comparative value of the horse and ox for the plough and waggon. The question may be one of interest to other climes; but in ours, I fancy, no doubt can exist; the ox may perform a portion of tardy and rugged labour in *cool* weather; but in our long and hot summers, the farmer will, from experience, find himself compelled to resort to horses. The ox is not designed by nature for *violent* exercise in *hot* weather; he is deficient in that "*vis medicatrix natrum*," that "*heat counteracting power*," of *sweating*, which horses possess in an eminent degree; his skin is not constructed for this refrigerant action. When overheated, he lolls out his tongue and slavers, and shortly succumbs to the overpowering effects of heat. The ox too is classed naturally among the slow-footed animals. The horse has a quick step, and will perform more work at the plough than the ox at any season, and vastly more in hot and sultry weather; and where labour is dear, and time precious, the *surplus* of his performance above that of the ox, will be found much more than equal the value of the meat and hide of the antiquated beef, and will fairly justify his master, to allow him in his old age, the "*otium cum dignitate*,"

> "In peace, t'enjoy his for *palms* and *pains;*
> And *gratefully* be kind to his remains."

The mule, I conceive, to be totally unworthy of notice, except for detestation. He is with few exceptions vicious, and comparatively worthless; in the plough he is unable to compete with the horse, and in the shambles with the ox; he is neither fit for the one purpose, nor the other.

The subject of *crops*, the great object of our inquiries and our labours, is too copious to be embraced within the narraw limits of a short address, and too important to remain wholly unnoticed.—The many disasters incident to our wheat crop, the *great staple* of our country, the *reliance* of the landlord and the tenant; and moreover its reduced value, when by chance it may have escaped those disasters; the insignificant value of Indian corn, as an article of sale, and in fact, the general *absence* or *paucity* of *monetary means*, indicate the obvious necessity of adding, or substituting, a new series of crops, which may be less precarious, and more profitable.

After as full an inquiry, and research into the subject, as perhaps it admits of, without experience, I have determined to make the ensuing year, a large experimental crop of fifty acres of cotton, which from my small experiment the present season, will afford an abundant and profitable crop, before the accession of frost; which period is becoming, annually, later, from the *draining*, *clearing*, and other physical causes operating a vast revolution in the general climate of our country—having made a difference, of at least three weeks, within the last ten years; and thereby affording fair prospects of a successful growth of cotton.

Palma Christi will form another member of the new series of crops, which I contemplate an experiment upon, the next season, and will, I anticipate, be a productive and profitable one.

Independent of other advantages, which the introduction of these and other crops may possess over the limited number that we now cultivate, that of *multiplying* the *varieties*, is one of considerable importance; by these means, the principles of rotation, the most unequivocally essential discovery, grown out of the science of modern agriculture, will neccessarily be more extensively and usefully applied; the selection of soils and subsoils in reference to their peculiar adaptations to their favourite plants, will be proportionally facilitated.

The boundless growth of vegetables designed for the use of man, and other animals, are comprised in two opposite and distinctly characterized families—the one having small leaves and few in number, which dry and wither before the crop is manured, derive their nourishment chiefly from the soil, and render it hard and dry—these are called *culmiferous*, and are great exhausters of the soil: to this family, belong wheat, rye, oats, Indian corn, &c.: the other having broad and abundant leaves, which continue green, succulent, and growing, till the crop is cut down, and bespeak the continued agency, of the foliage; in the sustenace of the plant, renders the soil *soft*, *mellow* and *open*—these are called leguminous, and operate to correct the hard, compact and cohesive soils. Of these two families, the numbers, though possessing the *generical* character, may be presumed to vary in their respective powers, and in many important and specific points; *some* delighting in clay, *others* in sandy soils; *some* in upland; *others* to be immersed in water;

"Fleminibus salices, crassis que paludibus alni;"

Hence inevitably, the advantages accruing to the agricultural community, from the introduction, of as many new and valuable crops, as our climate and soil may be capable of producing.

From the established principles, upon which *rotation* is founded, it must be inferred that each plant has its respective pabulum; that though this may be constituted of the same elements, yet it must consist of different proportions of those elements, and of different chemical arrangements; otherwise the different products would be totally unaccountable—the *acidulous* plants, for instance, must abound, in *oxygen*, the asidifying principle; the *oleaginous* will claim an excess of *hytrogen;* the *saccharine* of *carbon*, &c.; *because*, these elements are, respectively, the chief agents in the production of these results which those plants are known to afford; and, *a posteriori*, the pabulum requisite for their physiological functions must have been constituted of a large proportion of these elements.

It is repugnant to reason and analogy, to suppose that the deadly Upas, and the fragrant Magnolia, the poisonous Lobelia, and the healthful Cabbage, should derive from the same food such opposite qualities: the conclusion is irresistable, that they have respectively their favourite elements, on which they more heavily draw for their sustenance, and from a continued annual demand, by the same plant, of the same element, from the same soil, exhaustion, *quoad hoc*, must be the inevitable consequence; whereas, other plants, needing

other elements, may find an ample supply; hence the necessity of *rotation;* of a *varied succession* of crops, beyond the contracted shpere of our present practice.

Finally, a subject remains but little regarded, yet closely connected with that of crops; and deeply interesting to the farmer; because the knowledge of it may be essential to their preservation, when his labour and money have been expended on their production; I mean the hazard of their destruction by *spontaneous combustion*, when housed or stacked, too recently, in a green succulent state; an instance this season has occurred in my farm-yard, where many large stacks of top-fodder were discovered by accident to be strongly heated; upon examination, I found in the centre of each of them, and near the earth, bushels of carbonated stalks and blades, in different grades of ignition, which, when exposed to the atmosphere, was with difficulty prevented, by the active efforts of all the labourers on the farm, who happened to be near at hand, from bursting into a furious inflammation. A majority of these stacks had received no rain in the curing, yet were as much affected as those which had been wet; a strong instance of the fallacy of the opinion, "that water more than the juices of plants, promotes spontaneous combustion;" the oxygen of either is copiously and readily separated and absorbed by the carbonaceous matter of the plant; heat and hydrogen are devoloped; and the consequences are *fatal* and the *same;* which I truly hope, gentlemen, none of you may ever experience.

FLAX.

To raise flax, it is necessary that you sow good seed; and if you mean to make it profitable, have your land well prepared. A loamy soil is the best, but clay will do very well, provided the land is rich or has been well manured the year preceding, as it will not do so well to put on manure the same spring that you sow the flax, for the weeds in this case are apt to be troublesome. Flax may be weeded when young, but I had rather have no weeds, if possible. If you had potatoes on the land the year preceeding, and did not let the weeds go to seed, it will do well; or if the land is ploughed early, and let the weeds start up, and then plough them in, it will be found very useful. I do not like to sow flax as early as we do barley, summer wheat, rye or oats, because weeds will grow faster than flax in cold weather, so that the flax would be checked in its growth. About the middle of April is the proper time to sow, provided the land is pulverized fine, and is dry enough; if not, you may wait even till the 1st of May; but if sown much after this time, it will not have so good a caot. Dry, sandy land is not so good, but the flax may be helped by putting gypsum or plaister of Paris on it when young, as it helps to keep it moist, and makes it grow taller and produce more seed and better flax. Do not regard the moon, for its being new or old makes no more difference, than a white faced ox would standing on a mountain in view. Neither regard the wind, unless it be to sow it in a still time because you can sow it more even. Some flax was sown on my farm when the wind was south-

erly; one of my hired men said that it would be good for nothing; but it yielded three pounds to a rod, and the crop, including the seed, was worth more than fifty dollars per acre, which was far better than to raise one hundred pounds of poor, short flax, that will require nearly as much expense. My flax was sown on land that had corn on the year before, but the stalks were pulled up and put in the hog's pen, and the land well pulverized. The quantity of seed per acre depends much on the richness of the soil—you may sow from one to two bushels, for it is better to have but one seed to a narl, if the land is rich enough to have it sown thick. If you sow poor land thick, the flax will not be worth pulling.

A Farmer.

DISEASES OF SHEEP.

A writer in the New England Farmer has the following remarks on the rearing of this useful animal: "Frequently I have heard farmers complain of the loss of their lambs when arrived at some two, three, and even six or eight weeks of age, by some sudden malady, wholly unknown to them, and often without visible marks of any disorder previous to the agonies of approaching death.—Lambs said to have died in this situation are represented as healthy, thrifty, and full fed as any in the flock.

"The last spring my lambs for several weeks after birth appeared as healthy, and in as good condition as ever I had. At the age of from three to six weeks, several of them, perhaps three or four, were seized with a lameness in their legs, that made them reel and stagger like a drunken man, and at last blunder down. Two of them died in a short time, and were thrown away, the supposed victims of some new violent disorder. The others partially recovered from the first attack, but continued reeling and frequently tumbling down. New cases daily appeared, in which, as well as in the others, the symptoms of disease were, a strong aversion to moving about, much distress after sucking, weakness in the legs, staggering and falling down when attempting to walk, and in extreme cases a total loss of the use of their legs. Some of them after they could not stand were put into to the barn and their dams confined from the pasture. The dams would come sufficiently often for them to suck while lying down, or at most standing on their knees, for their joints had become so stiffened that their limbs could not be straightened even with a great force. After continuing a long time unable to stand or walk they nearly all died that were seized, only one in six or seven finally recovering. Some of the fairest and thriftiest lambs I ever saw pined away to mere skin and bones, though they had a good appetite and a plenty of milk. Supposing after several had died, there was a possibility of discovering their diseases by examining their stomachs and intestines, I began the operation. In the stomach of the first was found nearly a gill of little balls or gobbes of wool one fourth or one third of an inch in diameter, and felted together almost as solid and difficult to separate as a hat or a piece of fulled cloth, some of them nearly or quite

closing the entrance of guts. The stomach was much inflamed and in parts nearly in a state of putrefaction. All that had died after this I had examined, and the stomach of every one of them, fifteen or sixteen in number, were found to contain more or less of these balls, closing in most instances the entrance of the guts, and causing, as I should think, an obstruction sufficient to produce death. In these which died most suddenly were found the greatest number of balls, and the fewest in those which lived the longest.

"How the lambs could obtain so much wool by picking the bits of hay from their mothers and the other lambs, I cannot see; for, in the case I have named, the sheep and the lambs were guarded by a rack too close and tight to admit the hay's falling on them; and besides, when fodder is given on the ground, or in a barn so constructed that the lambs can have access to the hay at pleasure, I have not known this evil to have been produced. Till the last winter my lambs have had free access to the hay at all times of the day, but finding an inconvenience in their ranging at will all parts of the barn, I made some close racks, with troughs attached to them sufficient to rack the hay seed. The racks excluded the lambs from the hay at all times, except when the sheep were eating, perhaps one or two hours in a day. Lambs after they are ten or fifteen days old, manifest an inclination to have something in their mouth which they can champ, and they will generally pick over and eat some fine parts of the hay if it is within their reach. Their being mostly excluded from the hay, may induce them to be more eager in picking off the bits of hay they may see on others, and possiby for want of something more suitable to chew, they may seize the filaments and loose locks of wool that are often hanging about their mothers; indeed, I think I have noticed them biting and champing the loose stringy locks that are tasseled out of the surface of the old sheep's fleeces, and doubtless they may frequently swallow them.

"Sore eyes, for more than a year past, have been troublesome in my flock of sheep. I do not think the disorder very alarming, but yet, it is quite uncomfortable, and it has never quit the flock since it first appeared.—The treaties on sheep that I have seen, say nothing of sore eyes; and none but M. Daubenton mentions the disease in the lambs occasioned by their swallowing wool."

FROM THE VERMONT NATIONAL STANDARD.

TO FARMERS.

ON THE CULTURE OF WOOL.

There is perhaps no class in the community more slow to give credence to the practicablitity of innovation in agricultural economy than farmers themselves. Indeed so many bubbles are constantly bursting upon the world, that we can hardly blame their reverence for tried methods and antiquated customs. But every virtue, when carried to excess is apt to degenerate into an opposite vice with which it is allied, and it not unfrequently happens that an individual under the influence of extreme caution will venture to predict

the miscarriage of his neighbour in a new scheme of cultivation, until at length he is doomed to behold him far ahead in the course of successful experiment, and to lament too late the effects of his own prejudice and incredulity.—Those ideas have been suggested to us by the tardy advances and slow belief of our farmers in the advantages of improving our breeds of *Sheep* by the introduction of *fine fleeces.* The prejudices which have heretofore prevailed to a very considerable extent, seem now to be completely vanished, and the emulation which exists for the posession of the more improved breeds of this animal, is highly auspicious to the prosperity of the State. Those who possess flocks with an admixture of the Merino from a half to full blood, procure from forty to sixty or seventy cents per pound for their wool, while the price of the common fleece is only thirty-four cents. These profits of the improved breeds are further greatly enhanced by the superior weight of the fleece, which in ordinary flocks of half and three quarters blood, will average from three and a half to four pounds, while two and a half and three pounds is a good yield for common sheep with the same feed and keeping. A further benefit is seen in the superiority of price of the fine fleeced animals. A Merino ewe or buck is worth from 10 to 12 dollars, and 3-4th and 7-8ths blooded from three to six dollars, while from one dollar to one and a half and two dollurs is the price of native sheep. The preference of rearing sheep rather than cattle may be seen in the diminished labour, the ready profits, and the superior prices of sheep and wool over beef, butter and cheese.

The profits of keeping may be greatly augmented by improving the staple, which can be easily done by judicious management, by selecting the finest fleeced ewes for breeders, and more especially by crossing the blood with the Saxony race.—This family of sheep, it is well known, derive their origin from a selection made of a Spanish flock, and introduced into Saxony about sixty years since, where they have been nourished with peculiar attention until the fineness of their fleeces far surpassed that of the parent stock. This circumstance decides what has often been doubted, that the texture of the fleece improves in a northern climate. It is asserted by a writer in the Baltimore Patriot, that the Saxony wool commands near double the price in Europe and America of the fine Spanish Leonesa.

But we are frequently asked whether the price of wool will not by the present extraordinary competition, speedily be reduced, and whether he who devotes his capital exclusively to the production of wool, will not eventually be a loser.

Of this, the agriculturalist can judge perhaps much better than ourselves. We can merely state the facts that the duty on imported wool is now twenty-five per cent, *ad valorem*, and for some years to come is subject to an annual advance of five per cent. and that wollen manufactories are multiplying probably somewhat in proportion to the cultivation of the raw material. Wool like cotton, must always be an article which will command a fair price and a ready market, and the price will bear a considerable diminution before its production will be an unprofitable business for the grower.

FROM THE MONROE REPUBLICAN.

ON GYPSUM AS A MANURE.

The properties of Gypsum as a manure, are too well known to the farmers of the United States, by an extensive and profitable application to require any elucidation. Why so small a quantity as a *bushel* to the *acre* should produce such astonishing fertility, has been a matter of controversy. Some are of opinion that it acts as a stimulant, others that it attracts the moisture of the atmosphere, &c, but it is most probable that it owes its fertilizing power to its solubility in water, the same quantity of water dissolving more of this rock, than of any other.

Vegetables cannot absorb any substance unless it be in a state of complete solution, but the quantity of earthy matter found in vegetables is exceedingly small; it would therefore follow, that should that small quantity of earthy matter be presented to the mouths of the vegetable absorbents in a complete state of solution, they would take up as much as was necessary for the future developement of the plant, and would only require afterwards the free access of the fluids of heat and moisture, which contribute so much to vegetable growth and production. Now this quantity of earthy substances is furnished by the small quantity of the powdered Gypsum thrown over the plant, which dissolving by the first subsequent *rain* or even *dew*, carries what is necessary to the mouths of the absorbents and in this manner supplies the plant with all the earthy particles necessary for its future growth.

There are two negative proofs in favour of this supposition; first that Gypsum, or Plaster of Paris, when burned loses the greatest part of its fertilizing powers, and at the same time is deprived of its property of easy solution; whereas lime-stone, when burnt is of easy solution in water, and forms good manure, but in its natural state is not so easily dissolved in water, nor is it near so good for vegetable production; in both cases their utility as a manure appears to be in the direct ratio of their solubility in water.

The same theory is confirmed by the *lime-stone land*, being more favourable to the growth of vegetables, than soils are, produced by the decomposition of siliceous clay rocks; and perhaps for the same reason, that is, the solubility of lime stone, which, though a better manure when burned, because more soluble in water, than in its natural state, yet even in its state of lime-stone rock, is more soluble in water than those rocks composed of siliceous (sandy) or argillaceous (clayey) earths.

It may perhaps be found that artificial *composts*, as dung, &c. used as manures derive part of their fertilizing qualities from the salt and alkalies they contain, having the properties of facilitating the dissolution of the different earths and reducing them to a state of liquidity, capable of being absorbed by the vegetable as food, and of course accelerating its future growth.

The supposition, that Gypsum acts as the healthy stimulant of the food of animals, both as a stimulant and nourishment to the vegeta-

ble, is perhaps carrying the analogy of animal and vegetable life as far as our present knowledge of the state of both will admit.

FROM THE FARMER'S ASSISTANT.

VINE AND VINEYARD.

For garden-grapes, Mr. Forsyth selects the *white muscadine*, or *chasselas*, which is a great bearer; the *white sweet-water*, which is very fine-tasted, and ripens in September; the *black sweet-water*, which also ripens early; the *large black-cluster*, which is harsh-tasted, being that of which the Oporto wine is made; and the *small black-cluster*, which is pleasant-tasted.

The spots most favourable for vineyards are the sides of hills and mountains, descending southwardly, or to the east; but to the south is best; and let the soil be loose and mellow, but not liable to be much washed by heavy rains. Stiff soils are not good; though by carting on much sand, and other loosening manures, they will answer tolerably well. The ground must be well mellowed by ploughings, and mixed with sand, if not naturally sandy, and such manures as will serve to make it rich and keep it mellow. Where the hill sides are steep (and such produce the best vines) it is advisable to cart on stones of small and middling size to mix with the soil, which help to keep it moist and warm; and a part of them are to be laid along in ridges on the lower side of each row of vines, to keep the earth from washing away. Round the vineyard let a good substantial fence be made, which will keep out both men and beasts. The northerly side of the vineyard should be well protected from the northerly winds.

For a selection of vines for planting, Mr. Johnson recommends the following, as being hardy and best-suited to more northerly climates. The *black Auvernat*; the *black Orleans*; the *blue-cluster*; the *miller grape* (these make the best Burgundy;) the *black Hamburg*; the *red Hamburg*; the *white Muscadin*; the *Muscadella*; the *melie blanc*; the *white Morillon*; the *white Auvernat*; and the *gray Auvernat*.

The seven following kinds also ripen in September; but are not quite so hardy, and should therefore occupy the warmer parts of the vineyard, or be planted in more southerly climates: The *Chasselas blanc*, or *royal Muscadine*; the *Malvois*, or *Malmsey*; the *gray Frontenac*; the *red Frontenac*; the *black Lisbon*; the *white Lisbon*; and the *Chasselas Noir*.

In addition to these kinds, let the fox and black grape, as being indigenous, be also added to the list; the former of which is probably inferior to none of them.

The next in point is to select branches for the cuttings with which to plant the vineyard. These are to be taken from the *bearing* part of the vines; and among these, such as are short-jointed, from which you may expect vines which will be thrifty and fruitful. They should be sound, of a healthy appearance, thick-set with eyes, and the nearer the last year's growth the better. Let them be cut close

to the old wood, where they will be more firm ; and they are not to be cut to their proper length, which is about five inches, until you are about to plant them in the vineyard. Good branches, of the length of three feet, may afford four or five cutting ; though those which are nearest to the old wood are esteemed the best.

Some cut off the branches, to be used for cuttings, in October ; and others again, in March or April. If at the latter times, they are to be planted in April and May ; and the next winter they must be secured from the frost by coarse litter piled up round them ; which, in the spring following, may be strewed over the ground for manure. If the cuttings be planted in the fall, they are to be in the same manner preserved from the winter-frost. One method is also to set them out closely in the fall, in some warm dry spot, in a trench about a foot wide, which should be well prepared by diging, and over them erect a roof made of straw, well secured, to keep off the frost, and the heads of the branches to be kept in an upright position, by poles or laths surrounding them for that purpose, in order to prevent their lying on the ground, and thus becoming mouldy.

In planting the cuttings in the vineyard, after the ground has been well prepared, as before directed, let the thick ends be cut off square with a sharp knife, and the upper ends obliquely, about half an inch above the eye. Plant them at the distance of about eight or ten feet each way, and let the earth be pressed round them with the foot. They are to be set in an inclined position, leaving the upper bud or eye nearly as low as the surface of the soil, and be careful not to injure the eye in treading the earth about it. In the spring, while nightly frost prevails, let this bud, or eye, be slightly covered with earth in the evening, to save it from the frost, and again uncovered in the morning.

Remember to drive in the stake, on which the shoot is to be trained, at the north side, so as to give the shoot all the warmth of the sun. When the shoots begin to put forth, for some will rise from under ground, let them all grow for a certain time, in order that you may have an opportunity of determining which is likely to be the best; and these are the roundest, short-jointed, the most thick-set with eyes. Those which grow long and spindly, with few eyes, are not good. When you have thus selected the best, pinch off all the rest ; for all the nourishment which the roots can afford is requisite for its growth. As it advances in growth, fasten it to the sunny side of the stake, so that it be not beaten about with the winds, and pinch off its tendrils, laterals, nephews, and suckers ; not closely, however, but at some little distance from the body of the main shoot.

This shoot may rise to the height of eight or ten feet in a summer, if left to grow its full length; but its growth must be checked at the height of not more than four feet ; otherwise its strength becomes exhausted in the production of waste wood, and the head becomes feeble, and incapable of bearing the lateral branches, which it is destined to support.

October, or rather when the leaf begins to fall off, is the time for

triming; and then the branch should be cut down to two good eyes, not reckoning the lowermost next the old wood, which is called the dead eye; or several eyes may be left, which, during the next spring, will furnish a number of sprouts, and from these select the two best.

The vine being thus pruned, some direct to open the ground round the roots, to the depth of three or four inches, and to cut away the roots to that depth; not closely, however; and let this be repeated for the first three years; the use of which is to make the vine take deeper root, which it is said makes them more durable, fruitful, and less liable to be injured by droughts.

No particular notice is here taken of the method spoken of by Mr. Johnson, of bending the vines down to the ground at the approach of each winter, during the three first winters, and covering them slightly with earth, to protect them from frost; because it is not believed that this process is requisite. If it be found so, the head must not be covered with earth, but with chaff, or some such dry stuff, to keep it cool and dry.

The second year's growth should only exhibit two branches trained. The good eyes will all shoot forth in the spring; and let them all grow to the length of about eight inches, before you select the two most proper. These should have the characteristics already described, as necessary for the best branch of the first year's growth. Check the branches of the second year's growth at about five feet, pinching off the laterals, &c. at about four inches, as before directed. In the fall, when the leaves begin to drop, trim the vines, again, as before. Now you have two main branches to trim, and these should be cut down to within four or five good eyes of the last year's wood, dealing with the upper roots as before, and burying the vines during winter, as before mentioned, if this be found necessary.

The third year presents two main branches, each furnished with four or five eyes. Proceed as before in the choice of shoots to be reserved, training only two from each branch: Thus you will have four main branches this year. If you find your vines begin to bear this year, pluck off nearly all the clusters while young; for, by too early bearing, the vines become debilitated, and materially injured for bearing afterwards.

With respect to croping and pruning the vine, be always careful to check its aspiring nature, and keep it of humble size, by which means it is always easy to be managed by manual labour, and less subject to be injured by the violence of winds.

In the fourth year, training again two branches from each trained branch of the previous year, you will have eight branches to each vine. You, therefore, proceed as before in humbling the vine, and proportioning its quantity of fruit to its ability to bear; and remember not to let the vines bear all the fruit they put forth; until they are fully able to do it, without injury to them afterwards.

All this time, the ground of the vineyard is constantly to be kept light and mellow, and perfectly clear of weeds and grass. For this purpose, straw, chaff, flax-shives, and every thing of the kind is to be carried on, and spread over the ground, to keep it mellow and

moist, and to prevent its washing. Observing this the first four years, greatly forwards the vines, and at the same time prepares them for good crops afterwards; nor should the practice be afterwards wholly discontinued.

In planting a vineyard, it is also requisite to have a nursery of the vines at the same time, to supply those which may die when planted out. The ground of the nursery should not be so rich as that of the vineyard; it should be kept clear of weeds and well hoed; and it should be planted pretty thickly, in order that the roots do not extend too much.

A vineyard of an acre should contain but two sorts of grapes, and one of two acres should not generally contain more than four sorts. Every kind of grape should be made into wine by itself, and not mixed with others.

The vine, where the climate and soil is most suitable, will grow to a prodigious size, and live a surprising length of years. Strabo speaks of a vine which was twelve feet in circumference; and Pliny also mentions one which was six hundred years old! In the western parts of this State, and elsewhere in that direction, I have seen them, where, from the size of the trees on which they were supported, and they must have grown up with the trees, they could not be less than a hundred years old.

Mr. Johnson observes, that, from the prices which grapes have been sold for in our largest cities, the income of an acre of vineyard would amount to six hundred dollars; but, perhaps, this calculation is rather too large. Be this as it may, it is certain that their cultivation, whether they are to be made into wine or picked, and sent into our cities, or elsewhere, for sale, must undoubtedly be profitable.

The method of preserving grapes to send abroad, is to pack them up in dry saw-dust or bran; and in that situation they may be exported, if they should not be wanted at home, with the same facility and safety that they are at present sent from other countries into this, for sale. Probably they ought to be put up a little before they are fully ripe. In Albany and New York, they sell for as much, upon an average, as twenty-five cents per pound.

MOTION OF WATER-WHEELS.

There is a notion prevalent among practical operators, that water-wheels move faster by night than by day, and various theories have been suggested to account for the fact. The following letter from Professor *Cleaveland*, published in the last number of Silliman's Journal, proves the fact does not exist.

"My Dear Sir.—In a former letter, I mentioned the opinion existing in this part of the country, that saw-mills move faster during the night than the day. The explanation usually given by the workmen is, that the air becomes heavier after sunset.

"I selected a fine day in August, and requested that all the mill-gate, might remain stationary for 12 hours. At 2 oclock P. M. I

suspended a barometer in the mill; the pressure of the atmosphere was equal to 30,16 inches; the temperature of the water just before it passed the mill-gate was 72 deg. Fahrenheit. The log was then detached from the saw, and the number of revolutions of the wheel, being repeatedly counted by different persons, was 96 in a minute. At midnight, I again visited the saw-mill. The barometer stood at 30,36 inches; the *pressure* of the atmosphere having *increased* seven hundredths of an inch. The temperature of the water was 72 deg. the same as the preceding observation, although it had been a little higher during the afternoon. The log being detached, as before, the wheel was found to revolve precisely 96 times in a minute, showing the same velocity as at the preceding noon. The depth of the water was the same during both experiments. The workmen were satisfied that the result of the experiment was correct; but still they seemed to believe, that it would be different in a cloudy night.

WINTER FOOD FOR COWS.

M. Chabert, the director of the veterinary school of Alfort, had a number of Cows which yielded twelve gallons of milk every day. In his publications on the subject, he observes that cows fed in the winter upon dry substances, give less milk than those which are kept upon green diet, and also that their milk losses much of its quality. He publishes the following receipt, by the use of which, his cows afforded him an equal quantity and quality of milk during the winter as the summer.—Take a bushel of potatoes, break them whilst raw, place them in a barrel standing up, putting in successively a layer of bran, and a small quantity of yeast in the middle of the mass, which is to be left thus to ferment during a whole week, and when the vinous taste has pervaded the whole mixture, it is then given to the cows, who eat it greedily.

HORSES.

When your horses discharge water plentifully from their mouth (which some suppose to be in consequence of their feeding on the latter growth of grass) it is proposed to give two spoonsful of fine powdered rosin daily, for 3 or 4 days; then desist for a day or two; and repeat it at intervals for some time. An observing friend, who is willing to do good and to communicate it, remarks, "the benefit experienced, from using the above method, has been sufficient to authorise its recommendation to further trial."

SUGAR FROM BEETS.

The bulletin of the society in France for encouraging national industry, for July last, contains the following interesting intelligence. The perseverance of M. Captal, the President, in his efforts to encourage the manufacture of sugar from beets, has completely suc-

ceeded, and it is expected that France will soon be able to produce sufficient of this article for her own consumption. It is asserted in the most positive manner, that sugar from beets and sugar from canes, are precisely the same substances. It is acknowledged that the cultivation of beets is very beneficial to land in preparing it for a wheat crop, and after the saccharine matter is extracted, the root is excellent food for cattle. Besides the produce of sugar, the manufacturer obtains also molasses, which gives a considerable quantity of brandy—and in the manufacture great numbers of workmen find employment in the dull months of the year. Marshal the Duke of Ragusa, presented at the last exhibition, many fine loaves of sugar made from beets at the factory in Chastellon. A Mr. Cresvel owns a factory at Arras, where he made in 1822, about 280,000 pounds of sugar from this vegatable by an excellent process which he communicates freely to all who wish to be informed on the subject. He obtains from 10 parts of beets 5 parts of sugar, and 4 of molasses. One *hectare* of land, (2½ acres) planted with beets gave him 3,000 pounds of sugar, 1,200 pounds per acre.—Mr. de Beaujen, of Bellor, Orae, has simplified the fabrication of this sugar in such a manner, that it may be made in common families. A factory is established at Pout a Mousson, Mearthe, by Messrs. Masson and Andre.

ARTIFICIAL ICE.

A chemist, at Caen, has discovered a very convenient method of obtaining ice at every season. It consists in mixing, in a small cask, five pounds of pulverized sulphate of suda, with four pounds of sulphuric acid, at 36 degrees. The composition is capable of quickly freezing water. This freezing would inevitably take place at once, if large quantities were used ; but in cases in which only such quantities as those above mentioned, are employed, the vessels necessarily parting with a large portion of their caloric to the bodies which they contain, the mixture must be made three times before the production of ice can be insured.

SAGE PLANT.

The sage plant grows abundantly in the Island of Crete, and reaches the size of a small shrub. The leaves are collected annually by the Greeks, and dried to be used medicinally, as an infusion. They are particular in the time and manner of collecting these leaves, being always gathered on the 1st of May, before sunrise. The flavour and smell of the Greek plant is much more powerful than the common sage of our gardens.

FROM THE AMERICAN FARMER.

CHOLLIC.

A correspondent in your last paper, inquires for the " best and

most expeditious cure for the cholic." I have repeatedly tried a simple remedy, which is almost instantaneous in its effects in common cases. It is about half a gill of Holland gin, a small portion of ginger, and a small quantity of hot water, taken internally.

I have a servant, who is frequently attacked with this painful disorder, and who uses the gin and hot water without the ginger. He was attacked yesterday morning, so violently, that the perspiration rolled from him as if he had been at the severest exercise, in the warmest weather. He took a small quantity of the gin and hot water, and was perfectly relieved in four or five minutes.

While upon this subject, it may be well to mention a remedy for the disorder in horses, which has been tried with success in my neighbourhood. Take a piece of chalk, the size of a walnut, pound it fine, and put it into a quart bottle filled with the strongest cider vinegar, and immediately drench the animal therewith. It will act as a purgative in the course of a few minutes.

Yours, respectfully,

J. M. K.

POTATOE PAINTS.

Take a pound of potatoes, skinned and well baked; bruise them in three or four times that weight of boiling water, and then pass them through a hair sieve. Add two pounds of fine chalk in powder, previously mixed in double the weight of water, and stir the whole well together. This mixture will form a *glue*, to which any colouring powder may be added, even charcoal, brick, or soot, for painting gate posts, &c. exposed to the action of the air.

N. Y. Observer.

FRENCH CEMENT.

The French cement for the roof of houses, to preserve the wood and protect it from fire, is made in the following manner:

Take as much lime as it is usual in making a pail full of white wash, and let it be mixed in the pail nearly full of water—in this put 2½ lbs. of brown sugar and 3 lbs. fine salt; mix them well together, and the cement is completed.—A little lamp black, yellow ochre, or other colouring commodity, may be introduced to change the colour of the cement, to please the fancy of those who use it. It has been used with great success, and recommended particularly as a protection against fire. Small sparks that frequently lodge on the roof of houses, are prevented by this cement from burning the shingles. So cheap and valuable a precaution against this destructive element ought not to pass unnoticed. Those who wish to be better satisfied of its utility, can easily make the experiment by using a small portion of the cement on some small temporary building—or it may be tried on shingles put together for the purpose and then exposed to the fire.

GRAFTING.

Mr. *Forsyth* describes several methods of grafting:

As, first. *Grafting in the rind*, which is proper only for large trees.

Secondly. *Cleft-grafting*, which answers well on small stocks or limbs, and has been mostly practised in this country.

Thirdly. *Whip-grafting*, or *tongue grafting*, which is also proper for small stocks only; and, as Forsyth says, is the most effectual of any, and the most in use in Great Britain.

Fourthly. *Inarching*, or *grafting by approach*. This is done where the stock to be grafted on, and the tree from which the graft is taken, stand so near together that they may be joined.

Forsyth says, that grafts, or scions, should be cut off from the trees before the butts begin to swell; that they should be laid with the cut end downwards, and buried half their length in earth, having the tops covered with litter, to prevent their dying too much; that they should be all of the former year; that they should always be taken from healthy, fruitful trees; for, if taken from sickly ones, the grafts often partake of the distemper; that, if taken from young luxuriant trees, they may produce luxuriant shoots; but will not be so productive, as those taken from fruitful trees; that those which are taken from lateral, or horizontal branches, are to preferred to those of the strong perpendicular shoots; and that none should be taken from the sprouts of trees.

Mr. *Forsyth* prefers the *whip-grafting*, for common cases; but, for these, Mr. *Deane* prefers the *cleft grafting*. This, he says, is most commonly practised in this country, and is attended with success. It is done on the stocks in the nursery, or on the small limbs of trees. The proper season for it is just before the leaves begin to open. The head of the stock must be cut off sloping, and a split made sloping the opposite way, deep enough to receive the scion, which should be cut like a wedge, with the outside thicker than the inner. The rind of the scion must exactly join the rind of the stock. The split should be opened by a wedge of hard wood; the scion should then be gently put to its place and the stock closed. After this, the whole must be daubed round closely with mortar made of a mixture of loam and fresh horse-dung, so as completely to exclude the access of air; and this mortar must be surrounded with a windling of tow, or old cloths, to prevent the rains washing it away. The scion should be covered nearly to the top with this mortar; and it should also extend two or three inches downwards round the stock.

In place of this mortar, Forsyth recommends a plaister made of pitch, turpentine, and beeswax, which is in like manner to be daubed closely round, so as to exclude the external air. The mortar, however, if well made, and well applied, will answer very well. It should be composed of fine loam, not clay; because clay will contract and crack open, when dried.

Cleft-grafting may be successfully performed on trees, where the fibre of the outer bark runs round; such as the peach, plum, cherry,

&c. by first cutting through that bark, with a knife, at the place where the cleft is to be made, and in the same direction it may be expected to run; when the rest of the operation may be as easily performed as on other trees.

Whip-grafting is performed by cutting off the head of the stock sloping; then making a notch in the slope, from the upper part downward, a little more than half an inch deep, to receive the scion, which must be cut with a slope upwards, and a slit made in this like a tongue, which is to be inserted into a slit made in the slope of the stock; and the scion is then set in, so that the rinds of each join exactly together. The scion is then fastened by a ligature to keep it steady, and then surround it with mortar, or the plaister, as before.

Grafting in the rind is performed by cutting off the stock square; sliting down the bark a small distance, and raising it up, so that the end of the scion may be inserted between it and the wood: The scion is made with a shoulder, cut in about half its thickness, and the other half is sloped off gradually, so as to give it the form of a wedge; the cut-side being flat and the bark-side untouched. This wedge or tongue is inserted under the bark, with the shoulder fited to the stock; the raised bark is then pressed close and bound round, and the plaister is applied, as before mentioned. It is usual, in this case, to insert three or four scions in one stock.

Mr. *Preston* of Pennsylvania, says he has grafted scions which came from Holland, which were apparently dried, and they grew; but that he failed in other instances, where the bark of the scions appeared to have become somewhat roten. Has also been successful in grafting scions of the apple tree, as late as the twentieth of June, when the leaves of the trees were full grown.

CULTIVATION OF THE STRAWBERRY.

The ordinary method of propogating the strawberry, or what is commonly called "making new beds," is to detach and cut off the young plants from the parent root, in the fall of the year, after they have taken root, and then to set them afresh, in beds prepared for that purpose: so that, by being detached, they have the disadvantage of taking root a second time; and, by being cut off, derive no support by the string from the old root which would supply more nourishment than the root. This is like weaning an animal before it can take care of itself: the consequence of which practice is, that if the season be unfavourable, one half of the young plants, and sometimes the whole of them, perish, either by the dry weather or frost. Under the most favourable circumstances of weather and season, these young plants, thus transplanted and severed from the parent stock, and thereby losing the advantage of the nutriment which is communicated by the string, *seldom produce any fruit the first year*, or very little, if any. So that it may be stated, generally and correctly, that, under the most auspicious circumstances, *there is no crop the first year*, and sometimes not the second or the third

and very frequently a new plantation is absolutely and altogether necessary before the bed is in a state of perfection : and even such new plantation, and as many as may be made, is subject to the same casualities and failures as the first. In a dry season, perpetual watering is necessary to keep the plant from being scorched up by the sun; and watering is always troublesome and inconvenient and sometimes expensive.

Now, instead of following the old way, of making fresh beds by severance and transplantation, by which, under the most favourabe circumstauces, no fruit is obtained the *first year*, after such transplantation, *to a certainty*—and liable to casualties afterwards; I never transplant the roots at all, and yet I always get the finest, largest and greatest quantity of fruit, in the highest state of perfection, *the first year:*—and, let the weather be what it will, as scorchingly hot as it can be, my new beds never want watering; and, unless the blossom is struck with a blight, which every one knows the strawberry is subject to, I never fail of a full crop,—the first year being always the most abundant. So that, putting all other circumstances out of consideration, I gain one year by my practice; which alone is an important desideratum (*this is an unquestionable fact*, should there be no other advantage,) besides the superiority of fruit; and have nothing to fear but that blight, which it is impossible to prevent.

Now my plan is simply this : taking nature as my guide, and preferring her wisdom to that of man; for nature evidently intended, that as the young root shoots out from the old, and is nourished and supported by the string, which acts as a pipe to convey it food; in stead of cutting off the *young plants*, and leaving them to perish, or to exist according to circumstances, by their own strength, *I prepare the earth intended for the new beds by the side of the old ones*, and let such young plants take root of their own accord. This they will quickly do; and, aided by the string, will do it firmly, and early in the season, branching off in all directions: thus in the course of the autumn, I have as much ground as I please filled with *strong, healthy, luxuriant roots*, capable of standing any sun, from the shelter of the leaves—the severity of any frost, by the strength of the roots—and equal to the product of a full crop the next year : so that my new beds, instead of presenting naked earth, with a few puny, half starved plants, incapable of producing any fruit the following year, shew themselves in the highest state of luxuriance, verdure and perfection. The consequence is obvious. Instead of having no fruit the first year, and without being subject to the casualities before-mentioned, I get the largest quantity of the finest fruit the first year, *when others get none*—and one moment's consideration makes it evident that it must be so, from the very nature of the thing.

In this method especial care, however, must be taken, *not to disturb the roots* of the offsets, by weeding or other means; because if this be done, very little advantage will be derived from it, as the vigour, and strength of the plant depends entirely upon *its*

taking early root, and the *support that it derives, by the string*, from the old stock. After, therefore, having once taken root, it should on no account be disturbed.

But nothing can be more perposterous than the common practice, —which is, to deprive the young plant of the benefit which it derives through the string. And such is the superiority, even in appearance, of these new or first year's plants, over those of three years old, that I took particular notice, last winter, that whilst my *new* beds were green as a leek, the *old* beds looked as they were dead. The plants should never be allowed to remain more than three years, even two years is quite enough. After three or four years, they cease to throw out any shoots, and then perish.

It is very well known that all soils are not suitable to the strawberry; and, in such as are unpropitious to this fruit, it is in vain to attend to their cultivation. If those who are fond of horticultural subjects will try the plan here suggested, I think they will not regret the experiment.

I will mention another fact, to show its decided advantage; of which I could give ocular demonstration. I have three sets of plants: three, two, and one year old; from some unaccountable cause (as has been the case with the apple this year,) the two first entirely blighted as has been generally the case:) on the new or last year's beds I have had a fair crop of as fine fruit as ever was seen—and this I think I may attribute entirely to the strength and vigour of the new plant over those of the proceding years. Indeed, so thoroughly am I convinced from experience, and many years' observation, of the superiority of this plan over the old, that I am assured no strawberry plant ought to exist more than two years. If I could exhibit a set of new beds, which I have already made, this very scorching season, without the aid of one drop of water, no one would hesitate a moment in saying where the advantage lay.

FROM THE TUSCARAWAS CHRONICLE.

TOBACCO.

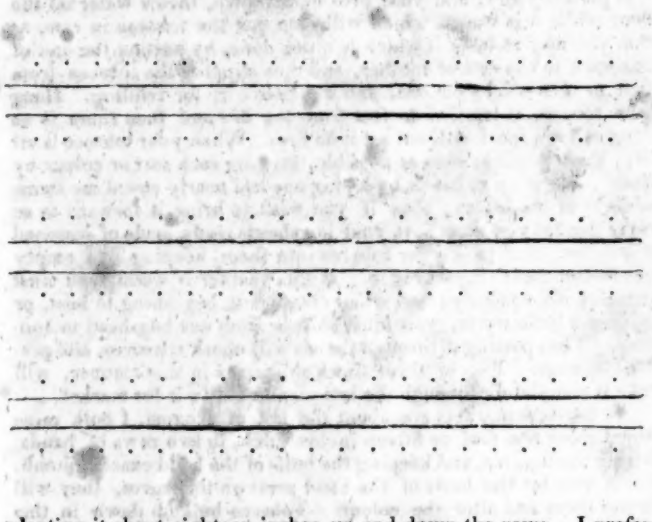
A farmer in Belmont county who has raised Tobacco with success for four years, gave us the following extract which he said comprehends all the directions necessary for the culture and curing of that most important article.

Extract of a letter from a gentlemaa in Baltimore, to his friend in Belmont, Ohio.

Sir—As you have written to me for some information on the cultivation of bright tobacco. I feel happy to inform you how I manage mine through the whole process. I burn my beds to sow my seed commonly in February, but any time between the last of October and the middle of March will do. I sow about ten feet square for every acre that I intend to plant. I sow about one gill of seed to every five acres I intend to plant. By these means, I commonly have plenty of plants in good season, which is a very essential thing,

in making a good crop of tobacco. I burn my beds with brush or corn stalks, just enough to kill the grass or weed seeds that may be in the ground; then I scrape all the ashes off clean, and dig up, and rake the ground smooth, then sow the seed, mixing it with dust, so as to sow it as even as may be, then rake it lightly, and tramp it as hard as possible.

The best way of preparing the ground for planting, is to plough and harrow it well, then take a slide and draw over it, so as to make every other row three feet apart, and every other eighteen inches; then plant right in the track or row mark thus:



planting it about eighteen inches up and down the rows. I prefer this mode to making of hills or ridges; for I find the plants stand the drought much better, and the tobacco will grow equally as well, as if planted in ridges.

When your tobacco is planted, you have no more to do with it, only to keep the worms off of it, until it gets nearly to its growth, and begins to turn a pale yellow or goslin green colour; then top it, and in two or three days you may cut it if the weather is dry. I commonly split the stalk, which I find to be the better way, as the stalk and stem will dry much sooner, than if it is pegged. I hang my tobacco on sticks about five feet long, and hang my plants just so as to clear each other; for if they croud other, they will turn red in the firing, I always fill my house in one day, if possible. If my force is not sufficient to fill my house in one day, I always cut the greenest that I intend to cut at that cutting first—for when we cut the yellowest first, it is likely to get too yellow before we get our house filled. When I get my house filled, I let it hang about twelve hours, and then commence with a slow fire made of small wood or

brush, building small fires about one yard apart: along each side of the house. I keep my tobacco about milk warm, till the points of the leaves begin to turn a little. By this time the points of the leaves will be considerably yellow, perhaps one-third of the way up the leaf.—Then I rouse my fire immediately, and dry it off as quick as possible. You must never let your fires give back or die away, or else you will be likely to have your tobacco spotted. In three or four days you may let your fires die away gradually, if your tobacco is thereby dry, stem and all. If this is not the case, you must keep the fire till it is. But it is commonly done in four days. When it is perfectly dry, and your fires burnt down, throw water on the floor while it is warm, which will soon put the tobacco in case, so that you may re-hang it which is quick done, by putting the end of one stick to the end of another, and thus slipping the tobacco from four or five sticks on one, and so remove it for refilling. Hang your tobacco at least, nine feet from the fire and then there is no danger, for a spark will not set it on fire. When your tobacco is all dry, then strip it as soon as possible, keeping each sort or colour by itself. Tie it up in hands, by laying one leaf nearly round the stems of eight or ten leaves; then if you wish to bring it forward to an early market you must have your hogsheads ready made of seasoned wood, and hand pack your tobacco into them, keeping one empty one to commence repacking in. If the weather is warm, you must examine it frequently; and when you find it beginning to heat, or getting a little warm, you must shift it from one hogshead to another. Thus passing it through the air will check the sweat and prevent damage. Two or three times shifting it in this manner, will take it completely through the sweat and qualify it for market.

As our best markets are about the last of August, I bulk mine down about one foot or fifteen inches thick, in two rows of hands, letting the tops lap, and keeping the butts of the hand exactly plumb; for if you let the butts of the hand press on the leaves, they will bruise them and alter the colour. Tobacco bulked down in this way may be all winter, and untill after harvest, and pass completely through its sweat, without taking any damage: for it will dry through when the weather is dry and come in case when the weather is wet, without heating so as to do it any injury. When it has gone through its sweat, you must hang it all up, and let it get dry.—Then the first time it comes in case (as it comes in case not as it goes out) when it gets so that you can just squeeze the leaf together without breaking at the same time the stem, so dry as to break two-thirds of its length from the butt-end, you must bulk it down immediately for pressing: and when you pack it into hogsheads for pressing, you must be careful to put it in strata, putting in one hand at a time; with the butts just touching the staves. You will go round and round the same as a farmer will build a stack of hay.

FROM THE AMERICAN FARMER.

CULTURE OF COTTON IN MARYLAND.

[Interesting letter on the culture of cotton in Maryland, publish-

ed by permission of Dr. Muse, President of the Agricultural Society of Dorchester county.]

Eastville E. S. Virginia, 22d Nov. 1825.

Joseph E Muse. Esq.

I have noticed your communication in the 30th number, vol. 7. of the American Farmer, and will endeavour to answer your inquiries. With respect to the Palma Christi, I am not able to give you much information. It was introduced here about two year since, and although a more profitable crop than corn or oats, the former stables of the country, it will be abandoned hereafter for cotton, as infinitely preferable to any thing we have yet tried. This is our first year of experiment in the latter article. Our crops are nearly in, and although the most unfavourable season ever known, the result has fully equalled our most sanguine expectations. It was doubted by many whether the season was not too short to mature cotton, and liable to be cut off by the frost; but on this point we are now perfectly satisfied. Even after the frost, there is sap enough in the branches to perfect all the balls. The quality of our cotton ranks equal to the best of upland, and even better. A few bales brought last week 2 cents per lb. in Baltimore, above the usual prices. This, I believe, must be owing to its being the product of of a more northern latitude. I have no doubt, whatever, that it is the most profitable crop you can raise. The cultivation is precisely the same as corn; the drilled system by all means to be preferred. The earlier you can get your crop to stand, the better, I would not advise you to commence planting sooner than the 10th or 15th of May; we begin here about the 1st. The gust on the 4th of June nearly destroyed our cotton this year, and many ploughed up, and replanted. One of my neighbours told me that he counted 110 perfect balls upon one stock of this replanted cotton. If your field will average *ten balls* to the stalk, it is a good crop. You need not dread the labour of picking out, it is not half the trouble we expected. Some of us plant this year 10, 15, 20, or 30 acres, and expect to finish in about two weeks hence. If you go extensively into cotton, you will require seed. I have promised to furnish Mr. Sinclair, of Baltimore with seed, which I shall select with thegreatest care from a farm that has made the best crop of any in the county, and was not annoyed with rot, rust or any other calamity. And if the theory held by some, that these diseases, the rot especially, are perpetuated through the seed, it is certainly deserving of attention, to be particular from whence you procure it. With respect to planting, I knew the following experiments made.—The seed were thrown into a loose flour barrel, and boiling water pouring on them: when cold enough to handle, they were rolled in ashes and planted. They came up in *four* days remarkably well. Other seed, soaked in cold water, came up in *eight* days. Other seed planted dry, vegetated in *twelve* days. From actual experiment, made by different persons this year, I believe that our salt marsh land, if not too low, is peculiarly adapted to cotton. I saw some most beautiful and flourishing last August, growing in a marsh pasture, planted as late

as the 20th of June, very full of blossoms, and promised well. This is very encouraging to some of us Eastern Shore farmers. I have here ventured a few hints, which, if they prove any way serviceable, will afford me much pleasure.

Very respectfully, your obedient servant,

F. H. SMITH.

P. S. With respect to cultivation, the main object is, to keep it clean of grass and weeds in its early stage. It is not near so liable to suffer from drought as corn or any thing else.

ROT IN SHEEP.

In the first stage of the rot, a sheep is in the frequent habit of rubbing the under lip against the fold, or its own fore legs, or any other hard substance; also of drinking a greater quantity of water when at the sheep-fold than those that are sound, and showing a disposition rather to lick off the moisture from than to crop off the grass. In the second stage, the lips, nostrils, and throat become swollen; the animal is feverish and insatiable thirsty, and almost incessantly visited by a sort of dry cough. In the third and last stage, the eyes become sunken, the eye veins, small, discoloured, and nearly bloodless, the eye-balls livid and dim, with whites exceedingly pale, the burrs of the ears swoln, and free from wax; the liver, lights, and throat ulcerated, and the passage of respiration being stopped, the animal is suffocated. "I was led to this experience," says the writer, "when very young in business, by an old shepherd who had been more than 40 years upon the farm." Pointing to a sheep rubbing its lip against the fold, and acting otherwise in the manner above described, 'That sheep master,' said he, 'is touched with the rot. The best thing I can recommend you to do with him is, to take him home, before he is too far gone, give him some ground oats, and make him tydish meat, and kill him." I did so, as sheep will thrive upon oats some time after they are first affected, and when the sheep was opened, I discovered that its liver was full of things resembling plaice, and its lights just beginning to become ulcerated. The next sheep I found in the first stage as above mentioned, I suffered, by way of experiment, to take its chance, and it died by suffocation, in the third stage as above stated, which was the result of *at least* a dozen experiments.

BEES

May be kept in health, and preserved during the winter, by providing them with salt in a diluted form, mixed with treakle and water. It should not be given to them in its crystalized state, (for bees have not the power of feeding on it, till it is dissolved, or pulverized,) but in a weak solution of four or five ounces to a gallon of spring water. In this state, it is a preservative against dysentery, the malady which is the most frequent and dangerous to these very interesting and valuable animals.

BOTANICAL EXPERIMENT.

Two young beech trees planted at the same time, in the same soil, at a small distance from each other, and equally healthy, were pitched upon as the subjects of the following experiments. They were accurately measured, and as soon as the buds began to swell in the spring, the whole trunk of one was cleansed of its moss and dirt, by means of a brush and soft water. Afterwards it was washed with a wet flannel twice or thrice every week till about the middle of summer. In autumn they were again measured, and the increase of the washed tree was found to exceed the other two to one.

Effects of animal charcoal in preventing the putrefaction of stagnant water.

M. A. Chevalier, of Paris, having been consulted by a gentleman respecting the best method of preserving a pond in his garden from putrifying, recommended the employment of animal charcoal. The small pond or basin was about nine feet in diameter and three deep. The water proceeded from a spring; but towards autumn it became putrid, and exhaled a mephitic odour. On the 10th of August, 1823, 4 lbs. of animal charcoal in powder were thrown into it, care being taken to spread it equally on the surface, where it first floated; but afterwards fell to the bottom. The effect of this was to remove all offensive smell from the water; and M. Chevalier upon examining a bottle of it, found that it had neither an offensive smell nor taste, though it had been out of the pond eight days. M. Chevalier observes that the animal charcoal which has been thus used in a pond, might, when taken out, be used as a manure, as it gives out by slow degrees to vegetable bodies the substances which it had absorbed.—*Dr. Brewster's Journal.*

QUICK WORK.

The following anecdote is related in proof of singular rapidity in the fabrication of woollens. Sir John Throngmorton presided one evening at a meeting of manufacturers, wearing a coat, the wool of which, at sunrise that morning, was on the back of the sheep. Thus in the space of twelve hours, the sheep was sheared, the wool cleaned, carded, spun and woven; the cloth scoured, fulled, sheared, dyed and dressed: in fine, at 7 o'clock in the evening, the coat was made. An almost incredible example of the power of industry, if true.—*Antwerb Paper.*

To try the quality of field mushrooms.

Take an onion, and strip the outer skin, and boil it with them; if it remains white they are good, but if it becomes blue, or black, there are certainly dangerous ones among them.

PRODUCTIVENESS OF THE POTATOE.

A correspondent of the *Leeds Mercury* states, that on the 18th of May last he planted a potatoe of the Irish breed (without either extra manure or labour) weighing one pound, and on the 7th of last month took up the produce, which weighed 46 pounds. Suppose this was planted and replanted for the term of seven years, and continued to be equally propuctive, it would yield 1,815,906,905 loads of potatoes, and would require 18,159,069 acres of land to grow upon, at the rate of 100 loads per acre.

COFFEE PLANTATIONS IN CUBA.

The following account of the coffee plantations in Cuba, forms a part of an article in the Missionary Herald for September. It was furnished for that work by a gentleman, who spent some part of the last winter and spring on that Island for the benefit of his health.

The coffee tree has only a single stem, which rises perpendicularly, and it is well filled with branches from within a foot of the ground upwards. In order that the fruit may be gathered with facility, the tree is not suffered to grow more than five feet and a half high. Its general form is conical.

A coffee-field is laid out with great attention to order and beauty. A piece of level ground is chosen, with usually a red soil, and is generally free from stones. A square, or parallelogram is then marked out, containing from 100 to 540 acres, to be enclosed in a hedge of lime, pinion, or other suitable material. The lime hedge is very beautiful, being from four to six feet thick, and having its top, by frequent trimming, a perfect level. The pinion is not so beautiful, makes as good a fence, and is more durable.

Having defined the boundaries of the estate, the principal avenues through it are next laid out; and they are generally two, three, or four rods wide, straight and intersecting each other at right angles. In the finished estates, these are usually ornamented and shaded on each side by rows of the orange, citron, mango, almond, avocado, and palm trees, &c. At the termination of one of these, and situated perhaps on elevated ground, is the house of the planter. Smaller avenues are next made parallel with the others. All these avenues are preserved free from weeds, and are kept smooth and neat.

Thus the whole ground is thrown into squares, which are to be filled with coffee plants. These, having previously grown to the height of one or two feet, from seeds sown under the shade of some grove, are carefully transplanted, and are arranged in rows parallel with the avenues, and six feet apart. A square contains 10, 20, or 30,000 trees. By the third year from this time, they begin to remunerate the planter; and at the end of six or seven years, may be regarded as manure. When a tree dies, a new one takes its place; but the original planting is expected to live fifteen years. Among the coffee, especially when it is new, the plantain is suffered to grow, for the purpose of giving bread to the negroes.—Here and

there, also the orange and citron trees, lift their golden fruit above the surface ; and far above the rest, the privileged palm, in every direction, waves its beautiful summit.

Such plantations are great, splendid gardens, and are justly regarded by the inhabitants as the glory of their island.

The plantations that are finished, contain from 100,000 to 400,000 trees in each, and are wrought by from 40 to 400 negroes ; and in proportion to the gross income, the expense of conducting them is said to be considerably less than that of the sugar estates. Hence their number is more rapidly augmenting.

The trees generally blossom in February, and the early part of May, and sometimes oftener ; but the blossom, on which most dependence is placed, is the one in May. Then a vast level surface, white as the drifted snow, is presented to the beholder ; but varied and enlivened by the taller trees just mentioned. The harvest commences in September, and ends in February or March. If, within this time, the average of half a pound of coffee is gathered from each tree, the harvest is esteemed good.

When the berries acquire a dark red colour, they are considered ripe for gathering, and the negroes, properly equipped, are sent into the field. An industrious negro will gather five bushels in a day ; and a bushel in the pulp, fresh from the tree, is expected to yield at least ten pounds of good coffee. It is then spread upon extentive dryers made of stone and mortar. This process requires nearly a month. The husk or shell is then separated from the seed, in a mill, which exactly resembles the mills in this country, where apples are ground in a circular trough, by a huge rolling stone—excepting that the roller for the coffee is wood, though of considerable weight. —In a few cases, a machine of a very different construction is used; but it need not be described.

The pulp being removed, the whole is exposed to the action of a fan, and then of a sieve ; after which the female slaves carefully pick out the defective kernels. From 12 to 15 hundred pounds may thus be cleansed in a day. In the opinion of the planters, the flavour of coffee is materially improved by age. That which is four or five years old is preferred.

FROM WILSON'S ORNITHOLOGY.

THE BALD EAGLE.

This distinguished bird, as he is the most beautiful of his tribe in this part of the world, and the adopted *emblem* of our country, is entitled to particular notice. He has been long known to naturalists, being common to both continents, and occasionally met with from a very high nothern latitude, to the borders of the torrid zone, but chiefly in the vicinity of the sea, and along the shores and cliffs of our lakes and large rivers. Formed by nature for braving the severest cold ; feeding equally on the produce of the sea, and of the land; possessing powers of flight capable of outstripping even the tempests themselves : unawed by any thing but

man ; and from the ethereal heights to which he soars, looking abroad at one glance, on an immeasurable expanse of forests, fields, lakes, and ocean deep below him ; he appears indifferent to the little localities of change of seasons ; as in a few minutes he can pass from summer to winter, from the lower to the higher regions of the atmosphere, the abode of eternal cold ; and thence ascend at will to the torrid or arctic regions of the earth. He is therefore found at all seasons in the countries which he inhabits ; but prefers such places as have been mentioned above, from the great partiality he has for fish.

In procuring these he displays, in a very singular manner, the genius and energy of his character, which is fierce, contemplative, daring and tyrannical : attributes not exerted but on particular occasions ; but when put forth, overpowering all opposition. Elevated upon a high dead limb of some gigantic tree, that commands a wide view of the neighbouring shore and ocean, he seems calmly to contemplate the motions of the various feathered tribes that pursue their busy avocations below ; the snow-white Gulls slowly winnowing the air ; the busy Tringæ coursing along the sands ; trains of Ducks streaming over the surface ; silent and watchful Cranes, intent and wading ; clamorous Crows, and all the winged multitudes that subsist by the bounty of this vast liquid magazine of nature.

High over all these, hovers one whose action instantly arrests all his attention. By his wide curvature of wing, and sudden suspension in air he knows him to be the *Fish Hawk*, settling over some devoted victim of the deep. His eye kindles at the sight, and balancing himself, with half opened wings, on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the distant object of his attention, the roar of its wings reaching the ear as it disappears in the deep, making the surges foam around. At this moment the looks of the Eagle are all ardour ; and levellinng his neck for flight, he sees the Fish Hawk emerge, struggling with his prey, and mounting into the air with screams of exultation.

These are the signals for our hero, who, launching into the air instantly gives chase, soon gains on the Fish Hawk, each exerts his utmost to mount above the other, displaying in these rencontres the most elegant and sublime aerial evolutions. The unencumbered Eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish ; the Eagle poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatching it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods.

BEAVER.

Among the animals in North America worthy of particular description on account of its ingenuity and provident habits is the

Beaver, as well as on account of its fur, which forms a very considerable article of commerce; there are still some ancient traces of these animals in New Jersey but their race at present appears to be extinct in this State—they are found on the western coast of Hudson's Bay.

A large beaver is about twenty eight inches in length, from the hind part of the head to the root of the tail, and weighs 60 or 70 pounds, but their colour is different; in some places they are black, in others white, and in others almost the colour of the deer. It is an amphibious animal. The beaver or as it is likewise called, the *castor*, lives to a great age; the females generally bring forth four young ones at a time. Their jaws are furnished with two cutters and eight grinders; the upper cutter is two inches and a half in length, the lower somewhat longer, the upper jaw projects over the lower one. The head is shaped like that of a rat, and is small in proportion to its body; its snout is long, its eyes are small and its ears sharp and round: its legs are about five inches in length, with paws formed like a man's hand; but the hind feet are webbed like the toes of a goose. The tail is shaped like the blade of a paddle, and is four inches broad where it joins to the body, five or six in the middle, and three at the extremity: it is about fourteen inches in length, and about an inch in thickness. It is covered with a scaly skin, the scales being near a quarter an inch long, and folded over each other like those of a fish.

The industry, foresight, and good management of these animals are extremely surprising, and scarce credible to those who never saw them. When they want to form a settlement, three or four, or more of them assemble together, and first pitch upon a place where they may have provisions, such as the bark of trees, roots, or grass, with every thing necessary for erecting their edifices, which must be surrounded with water; and if their be neither a convenient lake nor pond, they make one by stopping the course of some brook or river. For this purpose they cut down trees, above the place where they are resolved to build, and take their measure so well, as always to make the tree fall towards the water, that they may have the less distance to roll it when they have cut off the branches. This done, they float it to the place appointed, and these pieces they cut bigger or less to suit their convenience. Sometimes they use the trunks of large trees, which they lay flat in the water: at others they fasten stakes in the bottom of the channel, and then interweaving small branches, fill up the vacancies with clay, mud, and moss, in such a manner as renders the dam very tight and secure. In these works their tails serve them for carts and trowels, and their teeth for saws and axes; their paws supply the place of hands, and their feet serve instead of oars.

The construction of their houses are not less admirable; they are generally built in piles, at some distance from the shore, but sometimes close to the banks of the river; they first make holes at the bottom of the water for planting six posts, upon which each of their edifices is built in a most curious manner; their form is round, with a flat roof; the walls are two feet thick, and sometimes more; they are formed of the same materials as the dams just

mentioned, and every part is so well finished, that no air can possibly enter: about two thirds of the edifice is raised above the water; in this they lodge, and are careful to keep it clean. They have generally three or four different avenues to each house, which they enter under water. To provide provisions against the winter, they draw the sticks they cut from the trees, and thrusting one end into the mud, let them be under the water to preserve the bark green and tender for their winter provisions. There are sometimes found eight or ten beavers in one house, at others not more than three or four; and let them be as numerous as they will, they all lodge upon one floor.

The beavers are excellent food, but the tongue and tail are the most delicious parts. The Indians sometimes roast these animals in the same manner as we do pigs, first burning off their fur.

The following anecdote may serve as a further illustration of the admirable instinct, to say the least of it, of this ingenious animal.

A beaver has lived in the menagerie of the king's garden for some years; it is one of those from the Rhone, which lived separately like water-rats. This animal was defended from the cold of winter only by a more abundant litter. It happened one night that the cold had increased: the shutters of the hut closed but badly, and the beaver was urged to find means of preserving itself from the effects of a very rigorous temperature.—It had been the custom to give it a certain number of fresh branches to satisfy its desire of gnawing, and occupy it during the night; these were found stripped of the bark in the morning; food also was given it, consisting of greens and fruits, of an evening, before shutting it up, by closing the shutter, which was made like a pent-house. It had snowed too, and the snow had collected in one corner of its hut.

Such were the materials which the beaver, in this instance, possessed to form a wall of defence against the external air and cold; the branches were interwoven between the bar of the hut, exactly in the way that basket-makers interweave the small rosiers round the principal stems going from one to the other by contrary turns. Thus arranged, they left intervals, in which the beaver placed the carrots, potatoes and litter, which remained, each substance being cut so as to occupy and fill the spaces left.—Finally, as if the animal knew that the whole should be covered with a compact cement, he employed the snow to fill even the smallest aperture which remained. The wall filled up two thirds of the gap, and every thing which had been given to the animal, even the whole of its food, was employed in the construction.

In the morning, the snow having frozen between the branches and the shutter, the latter adhered to a new wall; when, however, removed, the work of the beaver became exposed. The boy who attended to the animal, was so surprised at this unexpected production, that he came and informed his master of it before any thing was deranged.

ANECDOTE.

Mr. Blodget, in his Economica, gives the following anecdote of a New England farmer as emblematical of the universal genius of the first settlers of this country; and however it may agree with the general character of that industrious and enterprising people, we do not give it as minutely correct, although we have known recently, an instance of a family which emigrated from Holland to the United States, in which one son was a farmer, another a blacksmith a third a wheelwright, and a fourth a physician.

A New England farmer having finished his attention to autumnal duties, thought of going to Europe to dispose of the timber cut from his last *new field, as captain and owner of his sloop.* His eldest sons received the following orders, to be observed during his absence: "John you may work in the smith's shop till you have iron shod the plough, and the cart wheels you have made, after which you may either build a saw or grist mill for yourself, on your own place. If I should not return in three months, you may repair and adjust the quadrant, and take charge of the old sloop, after you have new decked her. Joseph will help you spin the new rigging the sloop will want, after he has finished the loom for your mother to weave a top sail; on which, after turning the rounds for the spinning-wheel, he may plough the old field, and then go on a voyage to Labradore for cod, or a whaling to Falkland's Island, just as he likes. You must *take command* of the sloop yourself, load her for the West Indies, unless you find that governor Philip's last prices will do for young stock, and provisions, if so go to New Holland, and I shall be home, *God willing*, to welcome your return. My son Joseph, it is time to leave off making wooden clocks and fiddles; tan the hides and make shoes for the family." This is not beyond the character of the people, however it may agree in the minutiæ with any known incidents.

FROM THE NEW YORK COMMERCIAL ADVERTISER.

RURAL LIFE,

Or the American Farmer.

Far, far from the bustle of "high sounding fetes,"
And the "rattles" of city and town;
What pleasures we feel in our quiet retreat,
Where plenty our cottage surround.

CHORUS.

No life with a farmer's I think can compare,
For his days are tranquil,—his nights void of care.

Our woodlands afford us good timber and fire,
Our fields yield us grass,—hay and grain;
As for milk, cheese and butter, we have our desire,
With plenty of beef, pork and game.

Chorus—No life with a farmer's, &c.

The wool of merino's we to clothing apply,
Our orchards rich cider afford ;
And honey, and mead, our hives they supply,
While our garden enriches our board.
Chorus—No life with a farmer's, &c.

Our carriage and horses are ready at hand,
When we journey, or visit a friend ;
And every comfort we have at command,
For resourses with us know no end.
Chorus—No life with a farmer's &c.

The world thus our own, with a better in view,
We move on to those regions above ;
Where in fields ever verdant, our souls shall renew,
The worship of God, whom we love.

CHORUS.

No life with a farmer's I think can compare,
Who the world thus enjoys with thanksgiving and prayer

NEW-YEAR'S ODE.

While, with ceaseless course, the sun
Hasted through the former year,
Many souls their race have run,
Never more to meet us here.
Fix'd in an eternal state,
They have done with all below ;
We a little longer wait,
But how little none can know.

As the winged arrow flies,
Speedily the mark to find,
All the light'ning from the skies
Darts, and leaves no trace behind ;
Swiftly thus our fleeting days
Bear us down life's rapid stream ;
Upward, Lord, our spirits raise—
All below is but a dream.

Thanks for mercies past, receive,
Pardon of our sins renew ;
Teach us henceforth how to live,
With eternity in view.
Bless the word to young and old,
Fill us with a Saviour's love,
And when life's short tale is told,
May we dwell with Thee above.